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IS 8076 (2000): Frozen Cuttle Fish and Squid [FAD 12: Fish and Fisheries Products]



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“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक
फ़्रोजन कटल मछली एवं स्कुइड — विशिष्टि
(पहला पुनरीक्षण)

Indian Standard
FROZEN CUTTLE FISH AND SQUID —
SPECIFICATION
(*First Revision*)

ICS 67.120.30

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Fish and Fisheries Products Sectional Committee had been approved by the Food and Agriculture Division Council.

Cuttle fish and squid are important cephalopods with a high export potential and are also consumed by the people of the coastal region. Cuttle fish can be processed and packed as cuttle fish whole, cuttle fish fillets, cuttle fish rolled pack, cuttle fish fillets with tentacles, cuttle fish tentacles and cuttle fish fins. Squid can be packed as squid whole, squid tube, squid cylinder, squid fillets, squid rolled pack, squid tentacles and squid fins. They may also be available in other value-added forms as desired by the buyer.

This Indian Standard was formulated in 1976 to assist the industry in exercising proper quality control for export of the product. In this revision, the text has been updated and different types of packs have been included. Requirements have been incorporated for heavy metal contaminants.

In the preparation of this standard, due consideration has been given to the provisions of the *Prevention of Food Adulteration Act*, 1954 and the Rules framed thereunder and the *Standards of Weights and Measures (Packaged Commodities Rules)*, 1977. However, this standard is subject to the restrictions imposed under these, wherever applicable.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2:1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

FROZEN CUTTLE FISH AND SQUID — SPECIFICATION

(*First Revision*)

1 SCOPE

1.1 This standard prescribes the requirements and the methods of sampling and test for frozen cuttle fish and squids.

1.2 The term 'cuttle fish' would apply to the following and other allied genera:

- a) *Sepia*, and
- b) *Sepiella*.

1.3 The term squids shall apply to the following and other allied genera:

- a) *Loligo*,
- b) *Loliolus*,
- c) *Sepioteuthis*, and
- d) *Symplectoteuthis*.

2 REFERENCES

The following Indian Standards listed contain provisions which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated:

<i>IS No.</i>	<i>Title</i>
2237:1997	Prawns (shrimps) — Frozen — Specification (<i>third revision</i>)
4303	Code of hygienic condition for fish industry
(Part 1) : 1975	Pre-processing stage (<i>first revision</i>)
(Part 2) : 1975	Canning stage (<i>first revision</i>)
5887	Methods for detection of bacteria responsible for food poisoning:
(Part 3) : 1976	Part 3 Isolation and identification of <i>Salmonella</i> and <i>Shigella</i> (<i>first revision</i>)
11427:1985	Fish and fishery products — Sampling

3 TERMINOLOGY

3.0 For the purpose of this standard, the following definitions shall apply.

3.1 Cuttle Fish

Cuttle fish are all those cephalopods having ten circumoral arms, eight of which are short and two slender and tentacular. The suckers of the arms and tentacles are stalked and equipped with armature. Cuttle fish have an internal shell (cuttle bone) which is calcareous in nature and with a body which is ovoid and somewhat flattened, dorsoventrally. The fins in the cuttle fish are narrow and marginal in position extending on either side along the entire length of the mantle without uniting at the end.

3.2 Squid

Squid are all those cephalopods having ten circumoral arms, eight of which are short and two slender and tentacular. The suckers of the arms and tentacles are stalked and equipped with armature. Squid have an internal shell which is chitinous in nature and a body which is cylindrically elongate. The fins are either terminal or marginal in position and uniting at the apex of the mantle.

3.3 Fillet

The term is applied to the mantle which is opened length-wise along the dorsal side and where the cuttle bone, viscera, inksac, skin and head with tentacles are removed.

3.4 Tube

The term 'tube' is applied to the mantle which is not at all opened but is kept intact and where the cuttle bone, viscera, inksac, skin and head with tentacles are removed.

3.5 Cuttle Fish / Squid Whole

The term is applied to the whole animal without removing any of the body components

3.6 Cuttle Fish / Squid Whole Cleaned

The term is applied to cephalopods from which skin, intestine, inksac, liver, gills and eyeballs bone/pen and beak are removed. However, the tentacles are retained and the head is not separated from the body.

4 TYPES

Cuttle fish can be processed and packed as cuttle fish

whole, cuttle fish fillets, cuttle fish rolled pack, cuttle fish fillets with tentacles, cuttle fish tentacles and cuttle fish fins. Squid can be packed as squid whole, squid tube, squid cylinder, squid fillets, squid rolled pack, squid tentacles and squid fins. They may also be available in other value added forms as desired by the buyer.

5 REQUIREMENTS

5.1 Raw Material Requirements

The material shall be prepared from clean, wholesome and fresh cuttle fish or squid which do not show any signs of spoilage or any breaking or abrasions of the skin and which have been properly and adequately iced.

5.2 Hygienic Requirements

The material shall be prepared and processed as given in Annex A under hygienic conditions in premises maintained in a thoroughly clean and hygienic manner (see IS 4303).

5.3 Requirements for the Finished Product

5.3.1 The frozen cuttle fish or squid, on thawing, shall be in a clean, sound, intact and undamaged condition. The flesh shall be firm, ivory white in colour. It shall have no surface discoloration or deterioration. The odour and flavour of material on cooking shall be characteristic of cooked cuttle fish or squid when tested by the method given in Annex B.

5.3.2 The product shall also conform to the requirements prescribed in Table 1.

6 PACKING AND MARKING

6.1 Packing

Sardine (fresh and frozen) shall be packed in suitable container as agreed between the purchaser and the processor. In the absence of any such agreement the material shall be packed in containers which may withstand the stress and strain of transportation and prevent deterioration during transportation and frozen storage. A layer of food grade polyethylene shall be

Table 1 Requirements for Frozen Cuttle Fish and Squid
(Clause 5.3.2)

Sl No.	Characteristic	Requirement	Method of Test, Ref to	
			Annex of IS 2237	Other Indian Standard, and Annex of this Standard
(1)	(2)	(3)	(4)	(5)
i)	Total bacterial count/g, Max	100 000	B	—
ii)	<i>Escherichia coli</i> count/g, Max	10	C	—
iii)	Faecal <i>Streptococci</i> count/g, Max	100	D	—
iv)	Coagulase positive <i>Staphylococci</i> /g, Max	100	E	—
v)	<i>Salmonella</i> /Arizona, per 25 g	Absent	F	—
vi)	<i>Shigella</i> , per 25 g	Absent	—	IS 5887 (Part 3)
vii)	<i>Vibrio cholerae</i> , per 25 g	Absent	G	—
viii)	<i>Listeria monocytogenes</i>	Absent	H	—
ix)	Heavy metals :			
	a) Mercury, mg/kg, Max	0.5	L-3	—
	b) Copper, mg/kg, Max	20.0	L-4	—
	c) Zinc, mg/kg, Max	50.0	L-4	—
	d) Arsenic, mg/kg, Max	1.1	L-5	—
	e) Lead, mg/kg, Max	1.0	L-6	—
	f) Tin, mg/kg, Max :		L-7	—
	For product in tin plate containers	250.0	L-7	—
	For product in other containers	50.0	L-7	—
	g) Cadmium, mg/kg, Max	2.0	—	C

used between the material and the container when individually frozen sardines are packed.

6.2 Marking

6.2.1 Each container having the wrapped frozen material shall be marked or labelled with the following particulars:

- a) Name and type of the material with brand name, if any;
- b) Name and address of the processor;
- c) Batch number or code number;
- d) Net mass;
- e) Date of packing;
- f) The words 'Best before..... (month and year)' to be indicated; and
- g) Any other requirements as specified under the *Standards of Weights and Measures*

(Packaged Commodities) Rules, 1977 and Prevention of Food Adulteration Rules, 1955.

6.2.2 BIS Certification Marking

The product may also be marked with the Standard Mark.

6.2.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

7 SAMPLING

7.1 The method of drawing representative samples of the material for test and the criteria for conformity shall be according to the method prescribed in IS 11427.

ANNEX A

(Clause 5.2)

PROCESSING OF CUTTLE FISH AND SQUID

A-1 The cuttle fish or squids should preferably be gutted only inside the processing plant. The fish should be opened along the dorsal side length-wise with a sharp and narrow stainless steel knife. The head and tentacles, entrails, cuttle bone or pen, inksac, viscera and skin shall be removed. While removing the entrails and inksac, the inksac should not burst. Opened and eviscerated mantle shall be washed thoroughly with potable water containing 5 mg/kg available chlorine to remove the ink and all impurities. The fins along the side may be retained or removed. The interior rim and the sides of fillet are trimmed evenly.

A-2 The cleaned mantle shall be kept immersed in iced water nearest to 0°C and containing 5 mg/kg available

chlorine until removed for packing and freezing and such immersion at any rate should not exceed 2 hours.

A-3 The material shall be quick-frozen at a temperature not exceeding – 40°C within 4 hours after filleting and dressing. The time taken for freezing the core of the materials, 50 mm thick shall not exceed 90 minutes.

A-4 The quick-frozen material shall be stored in cold storage at a temperature of – 23°C or below.

A-5 The material of similar type, and of a fairly uniform size, shall be packed either flat or rolled loosely in polyethylene sheets. Sufficient clean, potable water containing 5 mg/kg of available chlorine to cover the material and glaze them should be added.

ANNEX B

(*Clause 5.3.1*)

DETERMINATION OF FLAVOUR

B-1 PROCEDURE

B-1.1 Thaw the material at 25-30°C temperature.

B-1.1.1 Place a fillet of cuttle fish or squid into the

boilable type of film pouch with some salt for taste. Immerse the fillet in boiling water and cook until the internal temperature of the muscle reaches 70°C in about 20 minutes and determine the flavour.

ANNEX C

[*Table 1, Sl No. (ix)*]

DETERMINATION OF CADMIUM

C-1 PROCEDURE

C-1.1 Weigh 10-15 g of the homogenized sample, (*see L-2* of IS 2237) into a Kjeldahl's flask and allow it to digest using suitable volumes of nitric acid and perchloric acid (4 : 1 v/v). Cool the solution and make

up the volume after removing excess nitric acid using ammonium oxalate solution. The sample is directly aspirated over a flame in an atomic absorption spectrometer and the concentration measured. A calibration curve is prepared from standard cadmium solution made from cadmium metal.

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Amendments Issued Since Publication

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**AMENDMENT NO. 1 MAY 2002
TO**

**IS 8076 : 2000 FROZEN CUTTLE FISH AND SQUID —
SPECIFICATION**

(*First Revision*)

(*Page 2, clause 6.1, line 1*) — Substitute 'The material' for 'Sardine (fresh and frozen)'.

(*Page 3, clause 6.1, line 2*) — Substitute 'cuttle fish/squid' for 'sardines'.

(FAD 12)